Summary of Methodology Utilized to Determine Willamette River Greenway Public Access Points and Taxlots Subject to Public Accessway Standards

Purpose

To identify and clarify in GIS, public access points and tax lots that are farther than 500 feet walking distance to a public access point within the adopted Willamette River Greenway boundary.

Background

The proposed Willamette River Greenway Code Amendments include access standards at EC 9.8812(4) that apply to housing that proposes five or more dwelling units on one development site. The standards require on-site pedestrian paths connecting main building entrances to the property line nearest to the Willamette River, to promote access to the river from within the development site. In addition, when the development site is not within 500 feet of a defined public access point, the standards give the City the option to require the dedication and improvement of a public accessway that is 10 feet wide and constructed in accordance with public improvement standards. If enacted, the required connection would extend to existing public ways that provide a connection to or along the Willamette River.

The following methodology details the identification of public access points and the following service area analysis which determines tax lots not within 500 feet of a defined public access point.

Methodology

Access Points

Public access points are defined and shown as mapped points where public right-of-way (ROW) and multi-use paths intersect with existing multi-use path connections inside the Willamette River Greenway, that lead to the Willamette River. The following GIS methodology builds off work done by Cameron McCarthy who developed the initial public access points layer.

1. 'Select by Location' used to select Eugene Area Parks from the Eugene Mapping Hub polygons that intersect the digital representation of the Willamette River Greenway from the Eugene Mapping Hub. Selection exported to new layer.
2. Used 'Intersect' tool to create points where the lines/roads from the Eugene_Ped_Network (from LCOG) intersect parks within the greenway.
3. Manual revisions made to explode multipart points and remove false access points (i.e. where a path wiggled in and out of a park slightly, creating multiple intersection points)
4. Steps 1-3 repeated for path intersections with the University of Oregon landscape zones within the Willamette River Greenway (i.e. North Campus area)

5. Resulting points from Willamette River Greenway parks and University of Oregon/Willamette Greenway landscape were then merged into one layer.
6. Manually deleted points where public access was wrongfully determined in the above analysis (i.e. gated neighborhood, unimproved path not within the Transportation System Plan).
7. Manually revised the points layer to include[1]:
    a. Points where there are planned multi-use access paths noted in the Eugene 2035 Transportation System Plan (TSP),
    b. Using 2021 aerial imagery, points that had been missed where improved ROW and multi-use paths intersected with the Willamette River Greenway boundary,
    c. Using 2021 aerial imagery, points located within the Willamette River Greenway boundary where both multi-use paths and improved ROW intersected with multi-use paths leading to the Willamette River, inside of the Willamette River Greenway boundary.
8. Two text attribute fields were then added to the access points layer: Location and CType (Connection Type). These fields will help to clarify the reason why points were added and distinguish between points located on the boundary of the Willamette River Greenway versus inside and points located at the juncture of a multi-use path versus at an improved street that leads to a multi-use path. Points were assigned either as Boundary or Internal under the Location field and either Multi-use Path, Improved Street, or Bridge under the CType field.

Figure 1: The point above was assigned as an Internal point under the Location field and as a Multi-use Path under the Connection Type (CType) field.

[1] The manual revision of the public access points resulted in an addition of 66 points, for a total of 130 access points.

Figure 2: The point above was assigned as a Boundary point under the Location field and Improved Street under the Connection Type (CType) field.

9. Points located on ROW were manually moved to the ROW centerline.

Service Area Analysis

The service area analysis identifies two categories of tax lots: Tax Lots Within 500 feet of Public Access Points and Tax Lots Not Within 500 feet of Public Access Points. The second category of tax lots would therefore be subject to the standard at EC 9.8812(4)(a).

10. The taxlot layer from the RLID data warehouse was exported on January 22, 2023 (this is the effective date of the taxlot layer).
11. The taxlot layer was then clipped to the digital representation of the Willamette Greenway from the Eugene Mapping Hub. This clipped layer will be used with the resulting service area analysis to determine which taxlots are more than 500 feet walking distance from a public access point.
12. A text attribute field, “Within500ft,” was added to the clipped taxlot layer to be used later on to identify taxlots that do not intersect with the resulting poylgons generated from the service area analysis.
13. A service area analysis was then performed:
    a. LCOG’s Walking Network Dataset (based on data from Open Street Map) was set as the network dataset.
    b. Created new service area analysis.
    c. Travel Mode was set to “On foot”, Direction set to “Away from Facilities” and Cutoff set at “500 ft.”
    d. Imported the Access Points Layer (developed in steps 1-9 above) as facilities.

1. In Field Mappings use geometry, OBJECTID was used as Field Name, append to existing locations and Snap to Network were both checked with a 25 ft snap offset. In the advanced menu, a 50 ft search tolerance was set.

e. The BarriersToWalking layer from LCOG's network dataset was imported as Line Barriers to the service analysis.
f. The Output Geometry was set at "standard precision", "overlap", and "disks". The Polygon Trim Distance was set at 50 ft in order to account for width of the ROW.
g. The service area analysis was run and resulted in a polygon layer that represents the full area that is accessible within a 500-foot walking distance to an access point. The image below depicts one of the resulting polygons from the service area analysis.

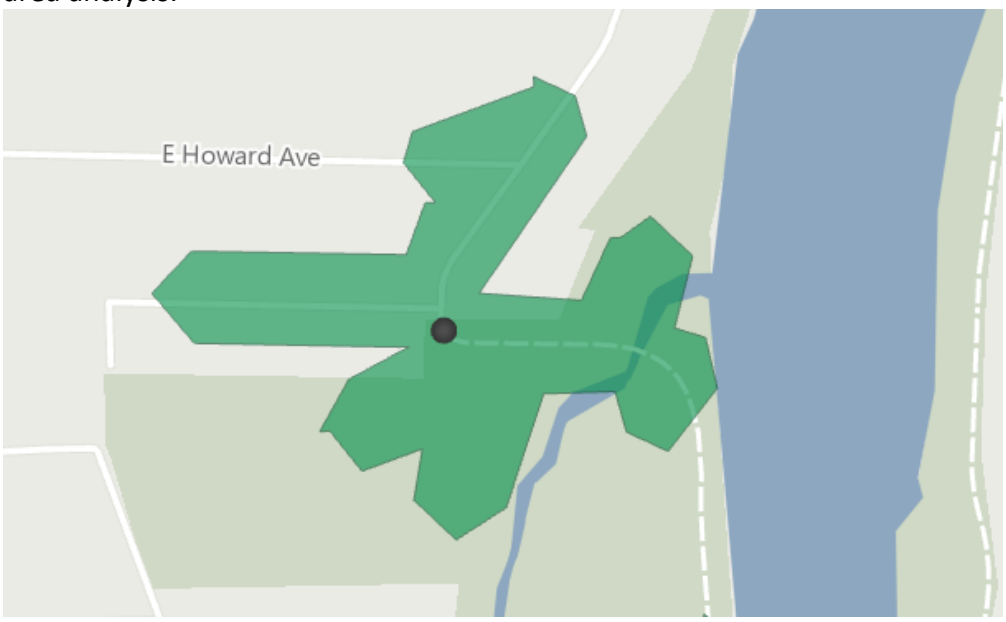

Figure 3: The green polygon, shown above, was generated from the service area analysis and depicts a 500 foot walking distance to the public access point, shown in black, using the path and street data as well as line barrier data provided by LCOG.

14. Using the 'Select by Location' function, taxlots from the WRG taxlot layer developed in Steps 10-12 were selected where they intersected with resulting polygon layer from the service area analysis. These taxlots were determined to be within 500 feet walking distance of a public access point and are exempt from the standards.
15. 6 taxlots directly adjacent to public access points located near Eugene's newly developed Downtown Riverfront were manually selected to be included within 500 feet of an access point as LCOG's Walking Network Dataset had not yet been updated to include the new roads and pathway connections.
16. Using 'Calculate Geometry', taxlots selected in Step 14 were noted as "Yes" within the "Within 500 ft" attribute field. Then the selection was switched and taxlots that did not

intersect the resulting service area analysis polygon layer were denoted as “No” in the Within 500 ft” attribute field.